IN THE CLAIMS

Please add claims 49.

Please amend claims 25, 26, 29, 35, 42 and 46 as follows:

1-22. (Cancelled)

23. (Previously Presented) A data alignment apparatus, comprising:

an input for receiving an input temporal series of parallel-formatted input groups of digital data units;

a data aligner coupled to said input and responsive to said input series for producing an output temporal series of parallel-formatted output groups of said digital data units;

an output coupled to said data aligner for outputting said output series;

said data aligner including a buffer coupled to said input for storing data units of a first said input group while a second said input group is received at said input, and a combiner coupled to said buffer and said input for producing one of said output groups by combining in parallel format all of said data units stored in said buffer and selected data units of said second input group; and

a data path coupled to said combiner and said output for permitting said one output group to be transferred to said output without being stored in said buffer.

24. (Previously Presented) The apparatus of Claim 23, wherein said combiner is for parallel concatenating said selected data units of said second input group with all of said data units stored in said buffer to produce said one output group.

25. (Currently Amended) The apparatus of claim 23, wherein said combiner includes a selector having inputs respectively coupled to said ~~first-mentioned~~ input and said buffer, and having an output coupled to said data path.

26. (Currently Amended) The apparatus of Claim 23, wherein said combiner ~~includes~~ comprises a rotator coupled to said input for rotating the data units of said second input group to position said selected data units of said second input group for said combiner to parallel concatenate said selected data units with all of said data units stored in said buffer to produce said one output group.

27. (Previously Presented) The apparatus of Claim 26, wherein said data aligner includes a controller for determining a rotation amount by which said rotator is to rotate the data units of said second input group, said controller having an output coupled to said rotator for providing to said rotator information indicative of said rotation amount.

28. (Previously Presented) The apparatus of Claim 27, wherein said controller determines said rotation amount based on a data unit storage capacity of said buffer.

29. (Currently Amended) ~~The apparatus of claim 28,~~ A data alignment apparatus, comprising:

an input for receiving an input temporal series of parallel-formatted input groups of digital data units;

a data aligner coupled to said input and responsive to said input series for producing an output temporal series of parallel-formatted output groups of said digital data units;

an output coupled to said data aligner for outputting said output series;

said data aligner including a buffer coupled to said input for storing data units of a first said input group while a second said input group is received at said input, and a combiner coupled to said buffer and said input for producing one of said output groups by combining in parallel format all of said data units stored in said buffer and selected data units of said second input group;

a data path coupled to said combiner and said output for permitting said one output group to be transferred to said output without being stored in said buffer;

wherein said combiner comprises a rotator coupled to said input for rotating the data units of said second input group to position said selected data units of said second input group

for said combiner to parallel concatenate said selected data units with all of said data units stored in said buffer to produce said one output group;

wherein said data aligner includes a controller for determining a rotation amount by which said rotator is to rotate the data units of said second input group, said controller having an output coupled to said rotator for providing to said rotator information indicative of said rotation amount;

wherein said controller determines said rotation amount based on a data unit storage capacity of said buffer; and

a further buffer coupled to said input and said combiner for storing said second input group while said data units of said first input group are stored in said first-mentioned buffer, wherein said controller determines said rotation amount based on a sum of respective data unit storage capacities of said buffers.

30. (Previously Presented) The apparatus of Claim 23, wherein each said input group is one of a head element, a body element and a tail element of a data packet.

31. (Previously Presented) The apparatus of Claim 23, wherein each of said data units is a byte.

32. (Previously Presented) The apparatus of Claim 23, wherein said buffer has a maximum data unit storage capacity that is equal to a maximum data unit capacity of the input groups in said input series.

33. (Previously Presented) The apparatus of Claim 32, wherein said maximum data unit storage capacity of said buffer is 16 data units.

34. (Previously Presented) The apparatus of Claim 23, wherein said data path bypasses said buffer.

35. (Currently Amended) A data alignment method, comprising:

receiving an input temporal series of parallel-formatted input groups of digital data units;

in response to the input series, producing an output temporal series of parallel-formatted output groups of said digital data units, including storing data units of a first said input group in a buffer while a second said input group is received;

said producing step including combining in parallel format all of said data units stored in the buffer and selected data units of said second input group to produce one of said output groups; and

outputting said one output group for further processing without storing ~~sid~~ said one output group in the buffer.

36. (Previously Presented) The method of Claim 35, wherein said combining step includes parallel concatenating said selected data units of said second input group with all of said data units stored in the buffer to produce said one output group.

37. (Previously Presented) The method of Claim 35, wherein said combining step includes rotating the data units of said second input group to position said selected data units of said second input group for parallel concatenation with all of said data units stored in the buffer, and parallel concatenating said selected data units with all of said data units stored in the buffer to produce said one output group.

38. (Previously Presented) The method of Claim 37, including determining a rotation amount by which said data units of said second input group are rotated based on a data unit storage capacity of the buffer.

39. (Previously Presented) The method of Claim 35, wherein said outputting step includes said one output group bypassing the buffer.

40. (Previously Presented) An apparatus for interfacing a digital data processor to a digital communication network, comprising:

a first data port that permits exchange of digital data with the data processor;

a second data port that permits exchange of digital data with the communication network; and

a data alignment apparatus coupled between said first and second data ports, including an input for receiving an input temporal series of parallel-formatted input groups of digital data units, a data aligner coupled to said input and responsive to said input series for producing an output temporal series of parallel-formatted output groups of said digital data units, and an output coupled to said data aligner for outputting said output series;

said data aligner including a buffer coupled to said input for storing data units of a first said input group while a second said input group is received at said input, and a combiner coupled to said buffer and said input for producing one of said output groups by combining in parallel format all of said data units stored in said buffer and selected data units of said second input group; and

said data alignment apparatus including a data path coupled to said combiner and said output for permitting said one output group to be transferred to said output without being stored in said buffer.

41. (Previously Presented) The apparatus of Claim 40, wherein said combiner is for parallel concatenating said selected data units of said second input group with all of said data units stored in said buffer to produce said one output group.

42. (Currently Amended) The apparatus of Claim 40, wherein said combiner ~~includes~~ comprises a rotator coupled to said input for rotating the data units of said second input group to position said selected data units of said second input group for said combiner to parallel concatenate said selected data units with all of said data units stored in said buffer to produce said one output group.

43. (Previously Presented) The apparatus of Claim 42, wherein said combiner includes a selector having inputs respectively coupled to said rotator and said buffer, and having an output coupled to said data path.

44. (Previously Presented) The apparatus of Claim 42, wherein said data aligner includes a controller for determining a rotation amount by which said rotator is to rotate the data units of said second input group, said controller having an output coupled to said rotator for providing to said rotator information indicative of said rotation amount.

45. (Previously Presented) The apparatus of Claim 44, wherein said controller determines said rotation amount based on a data unit storage capacity of said buffer.

46. (Currently Amended) ~~The apparatus of claim 45,~~ An apparatus for interfacing a digital data processor to a digital communication network, comprising:

a first data port that permits exchange of digital data with the data processor;

a second data port that permits exchange of digital data with the communication network; and

a data alignment apparatus coupled between said first and second data ports, including an input for receiving an input temporal series of parallel-formatted input groups of digital data units, a data aligner coupled to said input and responsive to said input series for producing an output temporal series of parallel-formatted output groups of said digital data units, and an output coupled to said data aligner for outputting said output series;

said data aligner including a buffer coupled to said input for storing data units of a first said input group while a second said input group is received at said input, and a combiner coupled to said buffer and said input for producing one of said output groups by combining in parallel format all of said data units stored in said buffer and selected data units of said second input group; and

said data alignment apparatus including a data path coupled to said combiner and said output for permitting said one output group to be transferred to said output without being stored in said buffer;

wherein said combiner comprises a rotator coupled to said input for rotating the data units of said second input group to position said selected data units of said second input group for said combiner to parallel concatenate said selected data units with all of said data units stored in said buffer to produce said one output group;

wherein said data aligner includes a controller for determining a rotation amount by which said rotator is to rotate the data units of said second input group, said controller having an output coupled to said rotator for providing to said rotator information indicative of said rotation amount;

wherein said controller determines said rotation amount based on a data unit storage capacity of said buffer; and

a further buffer coupled to said input and said combiner for storing said second input group while said data units of said first input group are stored in said first-mentioned buffer, wherein said controller determines said rotation amount based on a sum of respective data units storage capacities of said buffers.

47. (Previously Presented) The apparatus of Claim 40, provided as one of a SONET card, an Ethernet card and a token ring card.

48. (Previously Presented) The apparatus of Claim 40, wherein said data path bypasses said buffer.

49. (New) A data alignment apparatus, comprising:

an input for receiving an input temporal series of parallel-formatted input groups of digital data units;

a data aligner coupled to said input and responsive to said input series for producing an output temporal series of parallel-formatted output groups of said digital data units;

an output coupled to said data aligner for outputting said output series;

said data aligner comprising:

a buffer coupled to said input for storing data units of a first said input group while a second said input group is received at said input;

a selector having inputs respectively coupled to said input and said buffer, and having an output coupled to a data path, said data path coupled to said output for permitting said one output group to be transferred to said output without being stored in said buffer;

a rotator coupled to said input for rotating the data units of said second input group to position said selected data units of said second input group to parallel concatenate said selected data units with all of said data units stored in said buffer to produce said one output group; and

a controller for determining a rotation amount by which said rotator is to rotate the data units of said second input group, said controller having an output coupled to said rotator for providing to said rotator information indicative of said rotation amount.